



ICM

SEPTEMBER 2017

COST ACCOUNTING

Instructions to candidates:

- a) Time allowed: Three hours (plus an extra ten minutes' reading time at the start – do not write anything during this time)
 - b) Answer any FIVE questions
 - c) All questions carry equal marks. Marks for each question are shown in []
 - d) Non-programmable calculators are permitted in this examination
1. a) 'The Cost Accounting system is the key financial control system and monitors the results of ALL activities and ALL other control systems.' (From 'Costing' by T. Lucey). Explain, giving examples, how this would be so in a typical manufacturing organisation. [10]
- b) Explain from a costing perspective what the effect of increasing automation would be in a manufacturing company. [10]

2. a) Dan Resistors pays its production line employees on a piecework basis, but with a **guaranteed time rate**.

| Employee | Time Rate | Hours Worked (Guaranteed) | Produced | Piecework rate |
|---------------|-----------------|------------------------------|-------------|----------------|
| Abdul Prince | £16.00 per hour | 40 | 1,000 units | 60p per unit |
| Anna Smith | £14.00 per hour | 37 | 400 units | 65p per unit |
| Chippo Waheed | £12.00 per hour | 36 | 800 units | 55p per unit |
| Tom Nelson | £10.00 per hour | 40 | 900 units | 50p per unit |

TASK

How much will EACH employee earn during the week? Show your workings. [8]

- b) The following are the stock movements of stock item Beta 00:

| | Receipts (units) | Issues (units) |
|---------|----------------------|-------------------|
| 02 Aug. | 1,200 at £16.00 each | |
| 07 Aug. | 1,800 at £18.00 each | |
| 12 Aug. | 2,000 at £20.00 each | |
| 16 Aug. | | 2,100 |
| 24 Aug. | 2,000 at £21.00 each | |
| 27 Aug. | | 3,900 |

There was no opening stock.

TASKS

Prepare stock cards for stock item Beta 00, showing the value of EACH of the two issues and the value of closing stock using EACH of the following stock pricing methods:

- i FIFO [6]
- ii AVCO [6]

continued overleaf

3. Dissections, a manufacturing company, makes three products from one raw material. There will be limited supplies of this raw material next period. Budget information for the next period is as follows:

Maximum amount of raw material available will be £1,750,000.

| Product | X | Y | Z |
|---------------------------------|----------|--------|--------|
| Maximum possible sales in units | 9,000 | 12,500 | 21,500 |
| Variable costs per unit: | | | |
| Direct material | £48 | £48 | £44 |
| Direct labour | £15 | £16 | £16 |
| Overheads | £60 | £53 | £45 |
| Selling price per unit | £180 | £190 | £175 |
| Total fixed cost | £159,750 | | |

TASKS

- Calculate the contribution **per unit** for X, Y and Z. [3]
 - Calculate the contribution per £1.00 unit of materials, $(\frac{c}{dm})$ c = contribution: dm = direct materials, and rank the units according to which product earns the most contribution, e.g. 1 (most contribution). [3]
 - Calculate the optimum amount of raw material for X, Y and Z. [3]
 - Given the maximum amount of raw materials available, calculate the maximum profit the company can make next year. Show your workings. [6]
 - Explain, by reference to the question, the meaning and importance of the term '**limiting factor**'. [5]
4. Laborint plc operated a standard costing system. The standard cost of making one unit is as follows:
- | | |
|-----------------|-------------------------|
| Direct material | 4 kilos at £8 per kilo |
| Direct wages | 5 hours at £15 per hour |
- The actual cost of a batch of 1,000 units was:
- | | |
|-----------------|-----------------------|
| Direct material | £32,100 (4,100 kilos) |
| Direct wages | £75,550 (5,370 hours) |
- #### TASKS
- Calculate the following:
 - The material price variance [2]
 - The material usage variance [2]
 - The labour rate variance [2]
 - The labour efficiency variance [2]
 - The total cost variance [2]
 - Explain the **labour rate variance** and **labour efficiency variance** by reference to the relationship between the two variances. [6]
 - Explain what information you would expect to see on a standard cost card. [4]
5. The following information relates to Sky Products, a manufacturing company:

| | |
|--|-------|
| | £000 |
| Business rates and building insurance | 1,600 |
| Repairs and maintenance of machines | 300 |
| Depreciation of machines | 600 |
| Power consumption | 350 |
| Heating and lighting | 200 |
| Production manager's salary and expenses | 105 |
| Supervisors' salaries | |
| Department A | 50 |
| Department B | 60 |
| Department C | 40 |

Other data/information is as follows:

Value of machines (£000) – A = 1,500, B = 1,000 and C = 500

Floor area (sq. m) – A = 15,000, B = 15,000 and C = 10,000

Machine hours to be worked – A = 10,000, B = 10,000 and C = 15,000

Number of direct employees – A = 100, B = 120, and C = 80

The production manager's costs are to be apportioned in proportion to the budgeted machine hours to be worked.

Power consumption is to be apportioned in proportion to machine hours worked.

TASKS

- a) Prepare an overhead analysis sheet with columns showing (1) Basis on which overhead costs have been calculated, e.g. Value of machines, (2) A total column, (3) Columns for each dept. A, B, C, (4) Column for the type of overhead, e.g. Business rates and insurance. [10]
- b) Calculate the machine hourly overhead absorption rates for EACH of the three departments/cost centres. [4]
- c) Prepare a product cost for a job which requires 4 hours machining in Department A, 4 hours in B, and 10 hours in C. The materials cost is estimated at £1,544.70. [6]

6. Airwork Ltd has a capital budget of £2.5m available for investment in suitable projects for 2018. Two possible choices are as follows:

| | Project 1 | Project 2 |
|------------------------|------------|------------|
| Capital cost | £2,500,000 | £2,500,000 |
| Expected life | 5 years | 5 years |
| Residual value | nil | nil |
| Budgeted cash inflows: | £000 | £000 |
| Year 1 | 800 | 900 |
| Year 2 | 1,200 | 1,100 |
| Year 3 | 1,400 | 1,300 |
| Year 4 | 800 | 1,000 |
| Year 5 | 400 | 600 |

The cost of capital to Airwork Ltd is 8%.

Extracts from NPV tables are as follows:

| Year | 8% | 9% | 10% |
|------|------|------|------|
| 1 | .926 | .909 | .893 |
| 2 | .857 | .826 | .793 |
| 3 | .794 | .751 | .712 |
| 4 | .735 | .683 | .567 |
| 5 | .630 | .621 | .507 |

TASKS

- a) Calculate the payback period for EACH project. [4]
- b) Calculate the accounting rate of return for EACH project. [4]
- c) Calculate the NPV for EACH project. [8]
- d) Explain briefly 'the time value of money'. [4]

7. Write notes on FOUR of the following:

- a) Sunk cost
- b) Master budget
- c) Life cycle costing
- d) Joint products
- e) Profit/volume ratio (p/v ratio)
- f) Budget manual

[5 each]